UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.usplo.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,416	03/30/2004	Tetsuzo Ueda	43890-673	1264
MCDERMOTT	7590 04/13/2007	EXAMINER		
MCDERMOTT, WILL & EMERY 600 13th Street, N.W.			CRANE, SARA W	
Washington, DC 20005-3096		•	ART UNIT	PAPER NUMBER
			2811	
			,	· · · · · · · · · · · · · · · · · · ·
SHORTENED STATUTOR	Y PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE	
3 MO	NTHS	04/13/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

· · · · · · · · · · · · · · · · · · ·	Application No.	Applicant(s)				
	10/812,416	UEDA ET AL.				
Office Action Summary	Examiner	Art Unit				
	Sara W. Crane	2811				
The MAILING DATE of this communication app Period for Reply	pears on the cover sheet with the c	orrespondence address				
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING D. - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period of Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be timwill apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).				
Status						
·= · ·	Responsive to communication(s) filed on <u>20 March 2007</u> .					
,	,—					
, 	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in accordance with the practice under E	ex parte Quayle, 1935 C.D. 11, 45	03 O.G. 213.				
Disposition of Claims		•				
4) ⊠ Claim(s) 2,3,5 and 51 is/are pending in the appear 4a) Of the above claim(s) is/are withdraw 5) □ Claim(s) is/are allowed. 6) ⊠ Claim(s) 2, 3, 5, 51 is/are rejected. 7) □ Claim(s) is/are objected to. 8) □ Claim(s) are subject to restriction and/or	wn from consideration.					
Application Papers		•				
9) The specification is objected to by the Examine 10) The drawing(s) filed on is/are: a) acc Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Ex	epted or b) objected to by the I drawing(s) be held in abeyance. See tion is required if the drawing(s) is ob	e 37 CFR 1.85(a). jected to. See 37 CFR 1.121(d).				
Priority under 35 U.S.C. § 119						
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 						
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	4) Interview Summary Paper No(s)/Mail Da					
3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	5) Notice of Informal F 6) Other:					

Application/Control Number: 10/812,416

Art Unit: 2811

DETAILED ACTION

This is in response to Applicant's Amendment of 20 March 2007. Examiner has completed the update search for the claims of that amendment, and no new relevant prior art was found. However, the invention, substantially as set forth in these claims, was published prior to the filing of this application, as set forth by Applicant in the form PTO-1449 of Aug 18 2004, for example. The inventive entity of this application includes as inventor (Tetsuzo Ueda) who is not included in the list of authors for any of the publications. In particular, the teachings of the Applied Physics Letters publication, noted below, does not appear to be distinguishable from the subject matter of the claims as now pending. Because the inventive entity of this application is not the same as the author listing on that document, the document (on its face) is prior art under 35 U.S.C. 102(a).

So the finality of the previous Office action is withdrawn, the amendment of 20 March 2007 is entered, and the rejection below is entered pending clarification of the inventorship issue.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 2, 3, 5, and 51 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Onojima et al., "4H-polytype AIN grown on 4H-SiC (1120) substrate by

Art Unit: 2811

polytype replication," Applied Physics Letters, Volumn 83, number 25, 22 December 2003, pp 5208-10.

With respect to claim 51, the title of the document discloses 4H-polytype AIN grown on 4H-SiC. The first sentence explains that the purpose of the heterostructure is for "devices." Figures 2 and 3 show that the 4H AIN is epitaxial, and is formed directly on the SiC substrate. With respect to claim 2, the substrate is SiC. With respect to claim 3, the recited crystal face is taught. With respect to claim 5, AIN would have equal numbers of AI and N.

There is a document in the case file, apparently submitted by Applicant, titled "High-quality 4H-AIN of 4H-SiC(11-20) substrate by polytype matching," which does not appear to be listed on any of the forms PTO-1449. There is no date on the document. Examiner requests clarification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Page 4

Sara W. Crane Primary Examiner Art Unit 2811